Technical Memorandum

URS

To: URS Project File 52-00080001.00

From: Chris Moody

Date: December, 28, 2000

Subject: In-water Waste Recovery Activities-
Bradford Island Landfill

This Technical Memorandum summarizes the field activities and observation made during the December 2000 waste recovery operations conducted in the Columbia River adjacent to the Bradford island Landfill at Bonneville Dam, Cascade Locks, Oregon. This work was performed in accordance with the procedures outlined in the "*Work Plan Bradford Island Landfill, In-water Waste Recovery Plan*", dated December 2000 and prepared by URS.

The primary objectives of this project were:

1. Remove the electrical items present in the Columbia River located proximate to the landfill.
2. Conduct additional underwater surveys, down river from the landfill toward the Bonneville Dam spillway, to determine whether additional waste-related items may be submerged.
3. Collect and analyze river sediment samples beneath or near each area where electrical items are located.
4. Collect and analyze river sediment samples near an outfall on the north side of Bradford Island.

The collection of the sediment samples was intended to assist in the evaluation of potential PCB impacts to river sediments near where PCB-containing equipment was discovered. Due to weather constraints, objectives 1 and 3 could only be partially completed. The weather also prevented the completion of the additional underwater survey and sampling near the outfall (objectives 2 and 4).

Schedule

Recovery activities were performed on December 19-20, 2000. Recovery activities were planned to continue through December 22, 2000, however due to poor weather conditions (high winds and snow) USACE canceled the activities on these days.

Project Team

The project team outlined in the work plan was the one utilized for the removal activities. The USACE coordinated field logistics with the dam operator, provided and operated a work boat from which the divers and the recovery operations were deployed, and directed its three contractors (URS, Foss Environmental [Foss], and Advanced American Diving [Advanced American]). Each team member's responsibilities were outlined in the Work

Plan. Matt McClincy, Department of Environmental Quality (DEQ) Project Manager for this voluntary cleanup program site, was present during all field activities.

Waste Recovery

Both days of recovery were spent recovering a portion of the electrical equipment from the area of concern on the eastern tip of Bradford Island. Materials were recovered in an area from the eastern most tip of the island, to approximately 50 feet to the northwest as measured along the shore of the island. Figure 1 depicts the areas of concern identified during the hydrographic and dive surveys, and the area addressed during this recovery effort.

The following four types of electrical equipment were recovered from this area:

- Post Insulators
- Lightening Arrestors
- Intereen Capacitor (one)
- Electrical panels (switches)

Photos of the items are included with this Technical Memorandum.

The post insulators, electrical panels, and lightening arrestors were recovered by having a diver place a cable attached to the winch on the boat around the item. The electrical panels were recovered by having a diver place a "U" bolt through a pre-existing hole on the panels. Once at the surface Foss placed these materials into a 1-yard bulk bag made of tight nylon mesh, and stored these bags on a barge provided by Advanced American located next to the work boat.

Only one intereen capacitor was discovered and removed. The capacitor was visible on the shore of the island and was recovered by having a diver wade out to the item, place a plastic bag around the item and bring it back to the barge. The capacitor was then placed into a DOT approved 55-gallon drum. The intereen capacitor was believed to contain PCB oil, based on analysis of oils contained in similar items recovered during the October-November 2000 underwater survey.

Once the recovery barge was full, it returned to the upstream mooring adjacent to the navigation lock and the items were off loaded into rolloff bins for characterization and offsite disposal by USACE. During recovery operations, an oil containment boom with an 8-inch float curtain was placed around the work zone.

The approximate horizontal coordinates of waste items recovered, as well as the location of sediment samples obtained were recorded using a differential global positioning system. Figure 1 depicts the locations where sediment samples were collected during these activities.

Table 1 summarizes the number of items recovered during the two days activities took place.

Table 1
Electrical Items Recovered

Item	Post Insulator	Lightening Arrestors	Intereen Capacitor	Electrical panels
# Recovered	10 + broken parts	16 + broken parts	1	30 + broken parts

The USACE is presently in the process of characterizing the electrical items to determine the appropriate method of disposal. A total of three 10-yard rolloff bins were filled with the post insulators, lightening arrestors and electrical panels.

Sample Collection

Sediment was unable to be collected using the planned method outlined in the Work Plan of using a manually-operated drive hammer due to the predominantly cobbley nature of the riverbed. As an alternative to the drive method, a jar was sent down with the diver and the diver placed sediment present between the cobbles into the jar under the water. A total of four samples were collected during the recovery activities. Two samples (Sample IDs 001219BIL02SD, and 001219BIL03SD) were collected near the area where the intereen capacitor was recovered (one beneath the capacitor and one approximately 10 feet from the capacitor). A third sample was recovered from a 5-inch round disk that had fell out of a broken lightening arrestor (Sample ID 001219BIL01SD). The fourth sample was collected from the back of an electrical panel (Sample ID 001220BIL04SD). Figure 1 depicts the locations where the sediment samples were collected.

The disk and the back of the panel had acted as a sediment trap, therefore these samples consisted mostly of fine sands and silt sized particles. The other two samples that were collected from the riverbed consisted mostly of medium sized sands, since the sampling method could not recover the finer grained material from these areas.

Each sediment sample collected was submitted for analysis for PCBs by EPA Method 8082, Total Organic Carbon by EPA Method 9060, and petroleum hydrocarbons by Oregon DEQ Method NWTPH-Dx.

Table 2 summarizes the analytical results from the investigation.

A total of 4 crayfish observed near electrical components were collected. The diver placed each crayfish into a ziplock plastic bag, which was triple bagged at the surface. The USACE has stored the crayfish in an on-site freezer at the Bonneville Dam for possible future evaluation or analysis.

Table 2
Analytical Testing
Results for Sediment Samples
Bradford Island Landfill

Sample ID		001219BIL01SD	001219BIL02SD	001219BIL03SD	001220BIL04SD
Sample Date		12/19/00	12/19/00	12/19/00	12/20/00
Parameter	Units	Sediment in Lightening Arrestor Disk	Sediment Approximately 5' from Intereen Capacitor	Sediment Beneath Intereen Capacitor	Sediment in Electrical Panel
Aroclor 1016	mg/kg	0.16 U	0.12 U	0.12 U	0.13 U
Aroclor 1221	mg/kg	0.16 U	0.12 U	0.12 U	0.13 U
Aroclor 1232	mg/kg	0.16 U	0.12 U	0.12 U	0.13 U
Aroclor 1242	mg/kg	0.16 U	0.12 U	0.12 U	0.13 U
Aroclor 1248	mg/kg	0.16 U	0.12 U	0.12 U	0.13 U
Aroclor 1254	mg/kg	0.15 J C1	0.12 U	5 C1	8.3 C1
Aroclor 1260	mg/kg	0.16 U	0.12 U	0.12 U	0.13 U
DRH	mg/kg	43 U	31 U	29 U	32 U
RRH	mg/kg	86 U	62 U	58 U	64 U
TOC	mg/kg	10,000	370	1,900	1,500

Notes:
DRH-Diesel Range Hydrocarbons
RRH-Residual Range Hydrocarbons (oil)
TOC-Total Organic Carbon
All results reported as dry weight

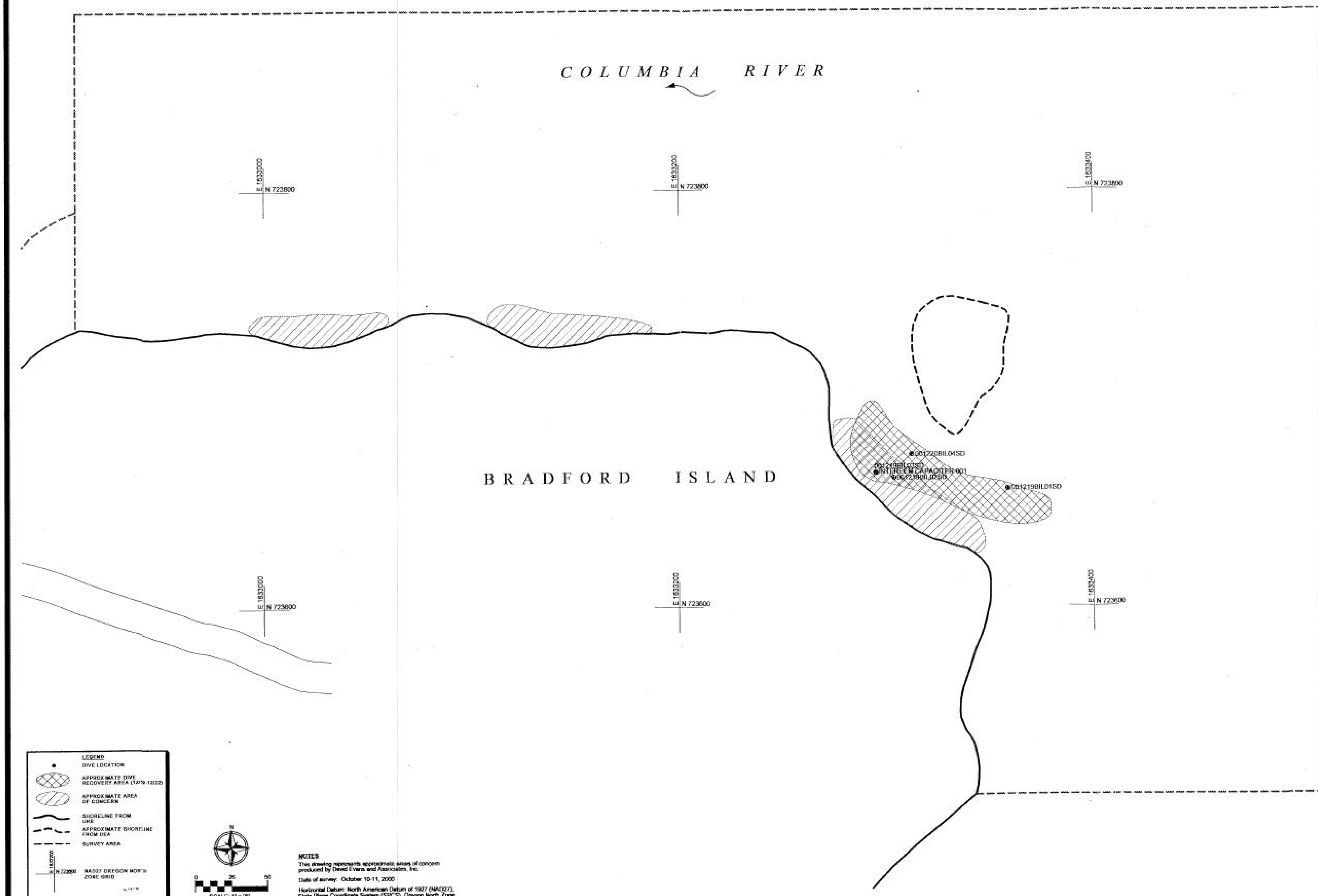
Data Qualifiers:

U: The analyte was undetected at the stated value.

J: The analyte was positively identified, however this is an estimated value.

C1: This analyte was positively identified and underwent second column confirmation.

FIGURE 1



NOTES
This drawing represents approximate areas of concern produced by David Evans and Associates, Inc.

Date of survey: October 10-11, 2000

Horizontal Datum: North American Datum of 1927 (NAD27), State Plane Coordinate System (SPCS), Oregon North Zone.

AREAS OF CONCERN
BRADFORD ISLAND,
BONNEVILLE DAM,
COLUMBIA RIVER, OREGON

DAVID EVANS AND ASSOCIATES, INC.
2828 S.W. CORBETT AVENUE
PORTLAND, OR. 97201-4830 (503) 223-6663

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Photographs from the Waste Recovery Activities-December 19-20, 2000

Recovery of a Post Insulator

Recovered Lightening Arrestors (on the left) and Post Insulators (on the right)

Recovering an Electrical Panel

Sediment Located in Disk From an Arrestor (sampled)